



North Carolina Department of Environment and Natural Resources

Dexter Matthews, Director

Division of Waste Management

Beverly Eaves Perdue, Governor
Dee Freeman, Secretary

February 10, 2011

Sent Via US Mail and Via Email – buddy.norris@averycountync.gov

Mr. Buddy Norris
Avery County Solid Waste Director
P.O. Box 640
Newland, NC 28657

Re: *Off-Site Landfill Gas Mitigation Plan*
Avery County MSW Landfill - Closed
Spruce Pine, NC, Solid Waste Permit Number 06-01

Dear Mr. Norris:

The Solid Waste Section has completed a review of the *Off-Site Landfill Gas Mitigation Plan* dated January 18, 2011 (Doc ID 12822) submitted on behalf of Avery County by RSG for the closed Avery County MSW Landfill. The *Off-Site Landfill Gas Mitigation Plan* was provided in response to landfill gas concentration exceedances near the MSW landfill property line within landfill gas probes P-3 and P-7.

The County's landfill gas mitigation plan is comprised of a phased approach. This includes: (1) Reactivation of inactive Landfill Gas Extraction Wells, (2) Enhancement of the Landfill Gas Collection and Control System (LFGCCS) Monitoring/Maintenance, and (3) Evaluation of Additional Measures and Recommendations.

In January 2009, four landfill gas extraction wells were removed from the LFGCCS due to a fire that occurred in/near these wells. The fire destroyed the well heads at these locations. In 2009, these well heads were secured to provide protection for the environment by preventing free-venting near the surface of the landfill. The County is proposing that these wells be rehabilitated with new well heads and new header pipes to allow for their reconnection to the LFGCCS. The County will also revise the Landfill Gas Monitoring Plan to include these actions. The revised plan will be submitted to NCDENR for approval.

In addition, the County recommends monthly monitoring and system adjustment for recovery optimization will be performed. Monthly monitoring of the LFGCCS as described in the Landfill Gas Management Plan will consist of the following:

1. Methane, Oxygen, Carbon Dioxide, and Pressure monitoring at each extraction well head;
2. Methane, Oxygen, Carbon Dioxide, and Pressure monitoring at the flare station; and
3. Adjustment of LFGCCS to balance recovery and ensure safe operation of the system.

The County will maintain this LFGCCS for a period of at least 12 months to evaluate the effectiveness of increased landfill gas recovery from the waste mass in alleviating off-site migration of landfill gas. During this time, landfill gas monitoring at the landfill and for off-site properties will be continued on a monthly basis. Reporting of these results will be accordance with the approved Landfill Gas Monitoring

Plan. Within 45 days of the completion of the 12 month period, the County will prepare an evaluation report that will summarize the data collected and provide conclusions and recommendations for any additional landfill gas recovery measures that are warranted for the recovery of landfill gas from adjacent properties.

The County's schedule for this phased plan is as follows:

- The repair and reconnection of wells W5 through W8 will be completed within 60 days of the approval of this plan;
- A revision of the Landfill Gas Monitoring Plan to include the proposed mitigation actions will be submitted within 60 days of approval of this plan;
- A report summarizing the field activities for the reconnection of these wells will be submitted to NCDENR within 60 days of completion of field work. This report will include surveys of key LFGCCS features and as-built diagrams of wellhead reconstruction;
- Monthly LFGCCS optimization and operation visits will begin upon completion of LFGCCS upgrade to include the additional wells. Field reports during this period will be provided to the NCDENR via email;
- A report will be submitted within 60 days of the completion of the 12 month evaluation period which will include conclusions regarding the effectiveness of the LFGCCS optimization and operation as well as recommendations for additional measures, if required.

As a result, the *Off-Site Landfill Gas Mitigation Plan* is approved as described for immediate implementation. If you have any questions or concerns regarding this letter, please contact me at 919-508-8500 or by email at jaclynne.drummond@ncdenr.gov. Thank you for your continued cooperation with this matter.

Sincerely,



Jaclynne Drummond
Compliance Hydrogeologist
Solid Waste Section

cc via email: Mark Poindexter, Field Operations Supervisor
Deb Aja, Western District Supervisor
Bill Wagner, Environmental Senior Specialist